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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,617	10/24/2003	Tung-Sheng Cheng	17956-US-PA	7208

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JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE
7 FLOOR-1, NO. 100
ROOSEVELT ROAD, SECTION 2
TAIPEI, 100
TAIWAN

EXAMINER

BROWN, JAYME L

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 11/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/691,617

Applicant(s)

CHENG ET AL.

Examiner

Jayme L. Brown

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 11-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☒ Claim(s) 3 and 6-8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-10, drawn to a flat-panel display (FPD) encapsulation apparatus, classified in class 156, subclass 382.
 - II. Claims 11-20, drawn to a method for encapsulating a flat-panel display (FPD), classified in class 156, subclass 286.
2. The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case, the apparatus as claimed can be used to practice another and materially different process, such as bonding optical disks or bonding wafers to a carrier plate.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Mr. Bob Gnuse on October 7, 2005 a provisional election was made with traverse to prosecute the invention of Group I,

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claims 1-10. Affirmation of this election must be made by applicant in replying to this Office action. Claims 11-20 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Drawings

6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 4 and 5. **Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application.** Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

7. The disclosure is objected to because of the following informalities:

On page 9, line 9, "those who skilled" should be changed to - - those who are skilled - -.

Appropriate correction is required.

Claim Objections

8. Claims 3 and 6-8 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 3 and 6-8 only discuss the materials being worked upon and do not add further limitations to the actual apparatus.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 2, they state a "low-pressure environment". It is unclear what a low-pressure environment entails. In other words, how low is low?

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1, 3, and 5-8 are rejected under 35 U.S.C. 102(b) as being anticipated by the Admitted Prior Art.

Regarding claim 1, the Admitted Prior Art discloses a flat-panel display (FPD) encapsulation apparatus, at least comprising: a chamber having an airtight space that is capable of providing a low-pressure environment, and a pressing mechanism disposed within the chamber, wherein the pressing mechanism can be operated in the low-pressure environment (Spec., paragraph [0004]; Figure 2A). The Admitted Prior Art anticipates claim 1.

Regarding claim 3, the Admitted Prior Art teaches that the first substrate is a cover substrate, and the second substrate is an electroluminescent substrate (Spec., paragraph [0004]; Figure 2D).

Regarding claim 5, the Admitted Prior Art teaches that there is a dispensing mechanism, which forms an adhesive on the first substrate (Spec., paragraph [0006]).

Regarding claim 6, the Admitted Prior Art teaches that the first substrate is attached to the second substrate with the adhesive (Spec., paragraph [0009]; Figure 2E).

Regarding claim 7, the Admitted Prior Art teaches that the adhesive is disposed on the first substrate is a closed loop or frame (Spec., paragraph [0006]).

Regarding claim 8, the Admitted Prior Art teaches that the adhesive disposed on the first substrate has a gap for air venting (Spec., paragraph [0006]).

13. Claims 1 and 9-10 are rejected under 35 U.S.C. 102(a) as being anticipated by Muramoto et al. (U.S. Pub. 2003/0178134).

Regarding claim 1, Muramoto et al. discloses a flat-panel display (FPD) encapsulation apparatus, at least comprising: a chamber (20 having an airtight space (seals 21) that is capable of providing a low-pressure environment, and a pressing mechanism disposed within the chamber (23a), wherein the pressing mechanism can be operated in the low-pressure environment (Page 6, paragraphs [0096]-[0100]; Figure 2). Muramoto et al. anticipates claim 1.

Regarding claims 9 and 10, Muramoto et al. teaches that the apparatus has an apparatus controlling mechanism (28e), which controls the moisture and oxygen in the airtight space by inputting inert gas into the airtight space (Page 4, paragraph [0058]; Page 6, paragraphs [0096]-[0097]; Figure 2).

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Admitted Prior Art in view of Tsutsumi et al. (U.S. Patent 5,254,205).

Regarding claims 2 and 4, the Admitted Prior Art is relied upon for the teachings above. The Admitted Prior art also teaches that a second substrate is attached to one end of the pressing mechanism and that there is a curing device having a supporting portion to support a first substrate (Spec., paragraph [0004]; Figure 2D). The Admitted Prior Art is silent toward a housing that is connected to the pressing mechanism that forms an operating space with the curing device, a vacuum device that decreases the pressure of the operating space to form the low-pressure environment, and a controlling device that controls the vacuum device to adjust the pressure of the operating space.

Tsutsumi et al. is directed to an apparatus for binding a silicon wafer to a carrier plate that uses two decompression chambers (2, 49). Chamber 2 is airtight. Tsutsumi et al. teaches that there is a housing (21) connected to a pressing mechanism (31, 32, 33), and that a pressure control means, which includes a vacuum pump, ventilation lines (pipes), and valves, that controls the pressure of both decompression chambers (Abstract; Column 3, line 41 – Column 4, line 43; Column 6, lines 58-63; Column 7, lines 9-48; Figures 1 and 2).

One skilled in the art would have readily appreciated having a second controlled chamber that forms a low-pressure environment in order to have no air disturbance during the bonding. This prevents air bubbles and dimples. It also allows for more uniform and controlled pressure during bonding, and more uniform thickness of the adhesive (Column 2, lines 23-40; Column 8, line 59 – Column 9, line 19; Column 10, lines 7-21). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a low-pressure environment within the chamber in the apparatus of the admitted prior art as suggested by Tsutsumi et al.

16. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over the Admitted Prior Art in view of Speer et al. (WO 02/054398) (English translation: U.S. Pub. 2004/0050485).

Regarding claim 2, Regarding claims 2 and 4, the Admitted Prior Art is relied upon for the teachings above. The Admitted Prior art also teaches that a second substrate is attached to one end of the pressing mechanism and that there is a curing device having a supporting portion to support a first substrate (Spec., paragraph [0004]; Figure 2D). The Admitted Prior Art is silent toward a housing that is connected to the pressing mechanism that forms an operating space with the curing device, and a vacuum device that decreases the pressure of the operating space to form the low-pressure environment.

Speer et al. is directed to an apparatus to for optical data carriers that comprises of a low-pressure chamber (8), a transfer chamber (64), an air chamber (75), and a

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joining chamber (90) that have vacuum devices (14, 60, 78, and 92). It has handling devices (20, 24) and housings (6, 46) (Abstract; Figures 1-3).

One skilled in the art would have readily appreciated having a second chamber that forms a low-pressure environment in order to prevent air bubbles and to reduce cycling times by keeping the main chamber at a constant low-pressure and eliminating the need to pump out the additional chambers every time the substrates are being assembled. The additional chambers can also help to reduce pressure fluctuations in the low-pressure chamber when substrates are being transferred into the chambers (operating space) (Pages 1 and 2, paragraphs [0003] – [0014]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a low-pressure environment within the chamber in the apparatus of the Admitted Prior Art as suggested by Speer et al.

17. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over the Admitted Prior Art in view of Speer et al. (WO 02/053357) (English translation: U.S. Pub. 2004/0055701).

Regarding claim 2, Regarding claims 2 and 4, the Admitted Prior Art is relied upon for the teachings above. The Admitted Prior art also teaches that a second substrate is attached to one end of the pressing mechanism and that there is a curing device having a supporting portion to support a first substrate (Spec., paragraph [0004]; Figure 2D). The Admitted Prior Art is silent toward a housing that is connected to the pressing mechanism that forms an operating space with the curing device, and a

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vacuum device that decreases the pressure of the operating space to form the low-pressure environment.

Speer et al. is directed to an apparatus for joining at least two substrates, especially for an optical data carrier. The apparatus comprises an upper chamber (18, 118) and a lower chamber (19, 119), a housing (7, 107), plates (34, 38, 134, 138) that hold the substrates (3, 4, 103, 104) and press, and vacuum sources (22, 26, 30, 122, 126, 130). The adhesive bonding the substrates may also be cured in the apparatus (Abstract; Pages 1-2, paragraphs [0007], [0011]-[0013]; Pages 3-4, paragraphs [0037]-[0039]; Figures 1-4).

One skilled in the art would have readily appreciated having a second chamber that forms a low-pressure environment in order to have uniform and even joining of the substrates and to avoid air bubbles (Page 1, paragraphs [0004]-[0012]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a low-pressure environment within the chamber in the apparatus of the Admitted Prior Art as suggested by Speer et al.

Conclusion

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jayme L. Brown whose telephone number is 571-272-8386. The examiner can normally be reached on M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Dunn can be reached on 571-272-1171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jayme L. Brown


GLADYS J.P. CORCORAN
PRIMARY EXAMINER